CLAIMS

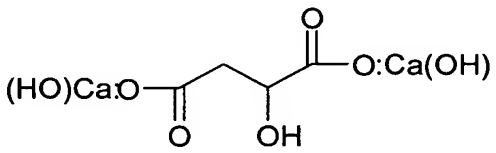
What Is Claimed Is:

1. A mineral fortified food matrix, comprising:

a dimetalhydroxy malate composition; and

a food matrix fortified with the dimetalhydroxy malate composition.

2. A mineral fortified food matrix as in claim 1, wherein the dimetalhydroxy malate composition is a dicalciumhydroxy malate having the structure:



3. A mineral fortified food matrix as in claim 2, wherein the food matrix is further fortified by a second nutritionally relevant metal source.

4. A mineral fortified food matrix as in claim 3, wherein the second nutritionally relevant metal source is an iron source.

5. A mineral fortified food matrix as in claim 4, wherein the iron source is an iron amino acid chelate.

6. A mineral fortified food matrix as in claim 1, wherein the food matrix is a natural cereal grain.

7. A mineral fortified food matrix as in claim 1, wherein the food matrix is a processed cereal grain.

8. A mineral fortified food matrix as in claim 1, wherein the food matrix is a beverage.

9. A mineral fortified food matrix as in claim 1, wherein the food matrix is a dry beverage mix.

10. A mineral fortified food matrix as in claim 1, wherein the food matrix is an oleaginous or dairy product.

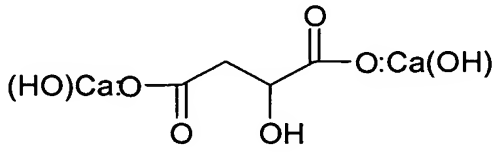
11. A mineral fortified food matrix as in claim 1, wherein each metal of the dimetalhydroxy malate is independently a nutritionally relevant metal selected from the group consisting of copper, zinc, manganese, iron, magnesium, calcium, and combinations thereof.

12. A method of administering a mineral in a bioavailable form to a warm-blooded animal, comprising:

fortifying a food matrix with a dimetalhydroxy malate composition; and

orally administering the food matrix fortified with the dimetalhydroxy malate composition to a warm-blooded animal.

13. A method as in claim 12, wherein the dimetalhydroxy malate composition is a dicalciumhydroxy malate composition having the structure:



14. A method as in claim 12, further comprising the step of fortifying the food matrix with a second nutritionally relevant metal source prior to administering.

15. A method as in claim 14, wherein the second nutritionally relevant metal source is an iron source.

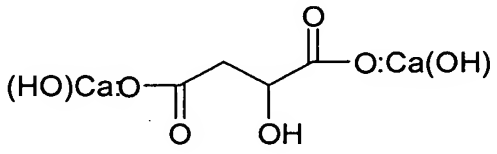
16. A method as in claim 15, wherein the iron source is an iron amino acid chelate.

17. A method as in claim 12, wherein the food matrix is selected from the group consisting of natural cereal grains, processed cereal grains, energy bars, beverages, dry beverage mixes, oleaginous foods, and dairy products.

18. A method as in claim 12, wherein each metal of the dimetalhydroxy malate is independently a nutritionally relevant metal selected from the group consisting of copper, zinc, manganese, iron, magnesium, calcium, and combinations thereof.

19. A calcium fortified food matrix, comprising:

a dicalciumhydroxy malate composition having the structure:



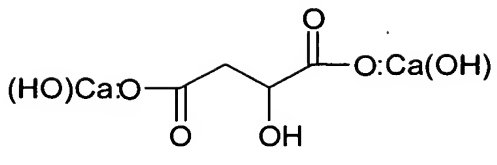
; and

a food matrix fortified with the dicalciumhydroxy malate composition.

20. A calcium fortified food matrix as in claim 19, wherein the food matrix is further fortified with an iron amino acid chelate.

21. A method of administering calcium in a bioavailable form to a warm-blooded animal, comprising:

fortifying a food matrix with a dicalciumhydroxy malate composition having the structure:



; and

orally administering the food matrix fortified with the dicalciumhydroxy malate composition to a warm-blooded animal.

22. A method as in claim 21, further comprising the step of fortifying the food matrix with an iron amino acid chelate prior to administering.